

Figures

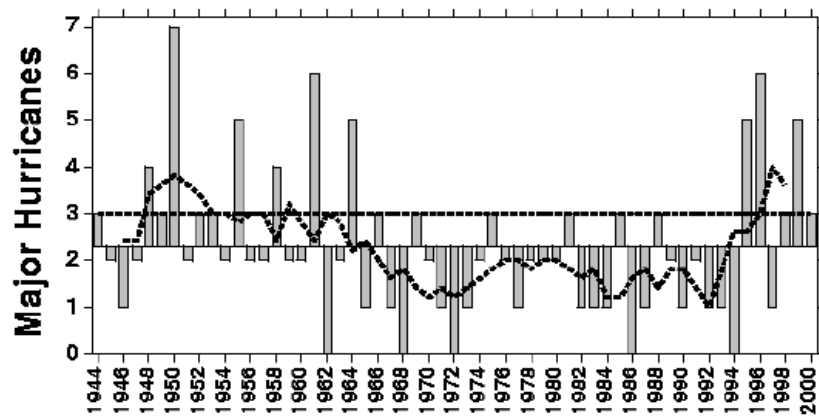


Figure 1.

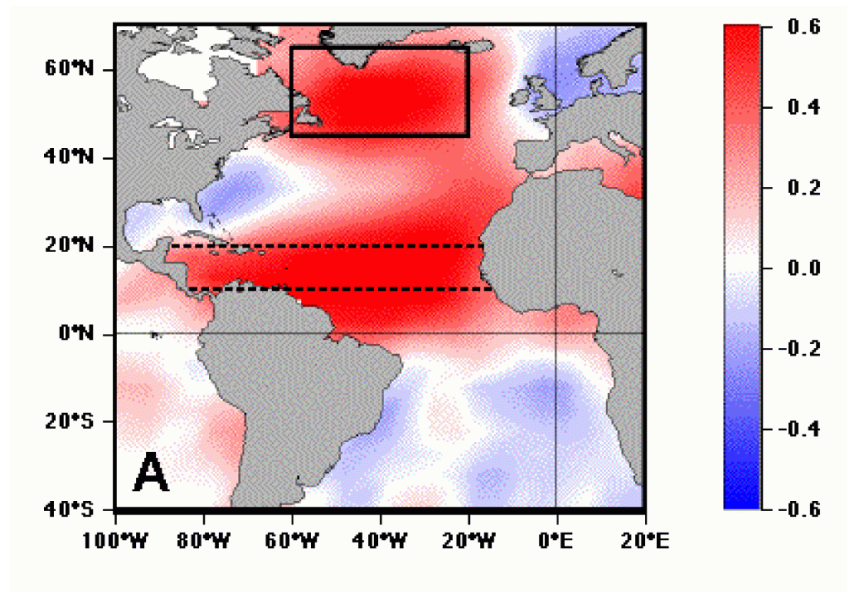


Figure 2a.

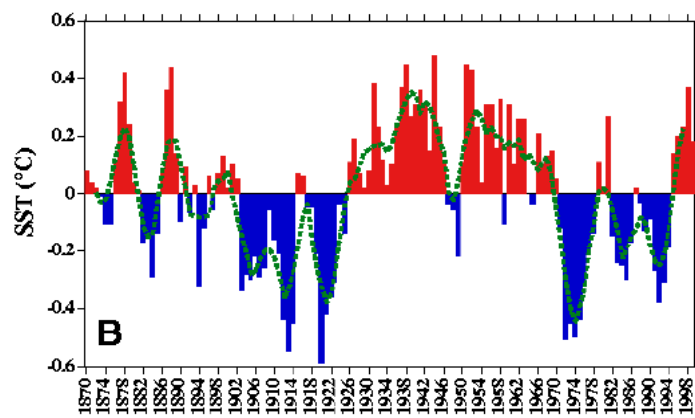


Figure 2b.

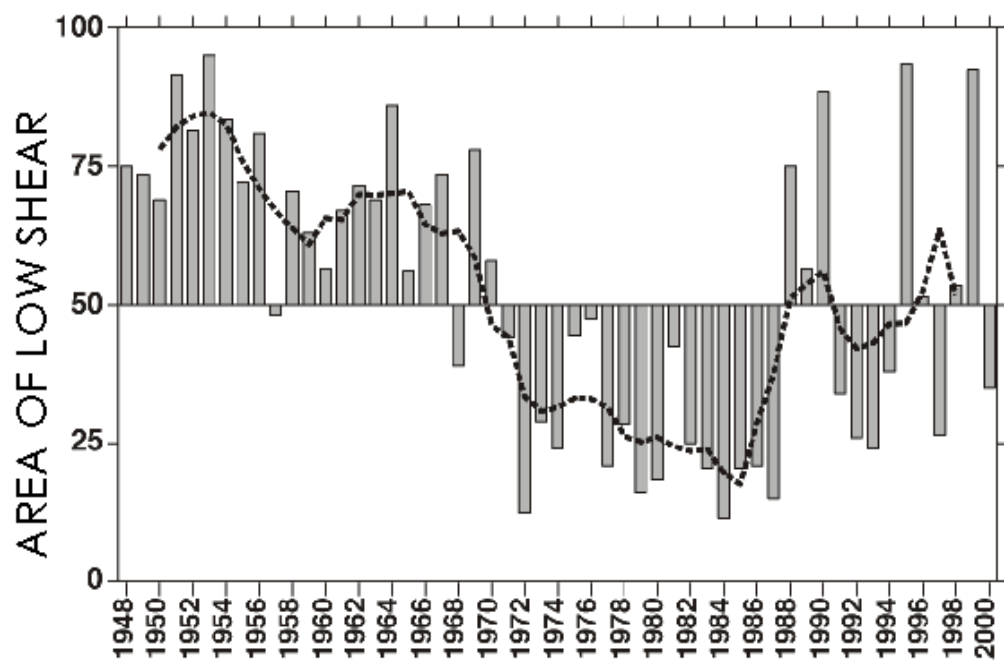


Figure 3.

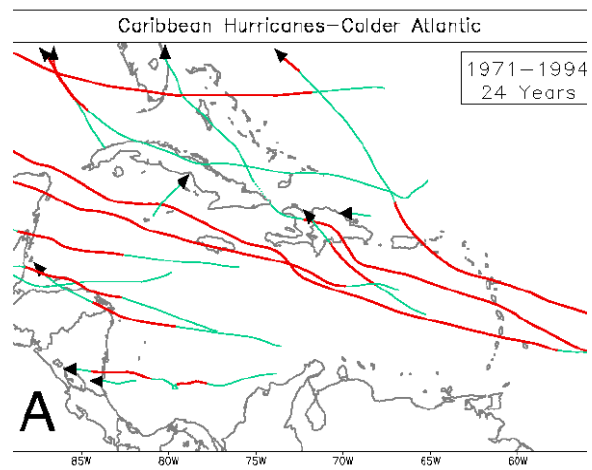


Figure 4a.

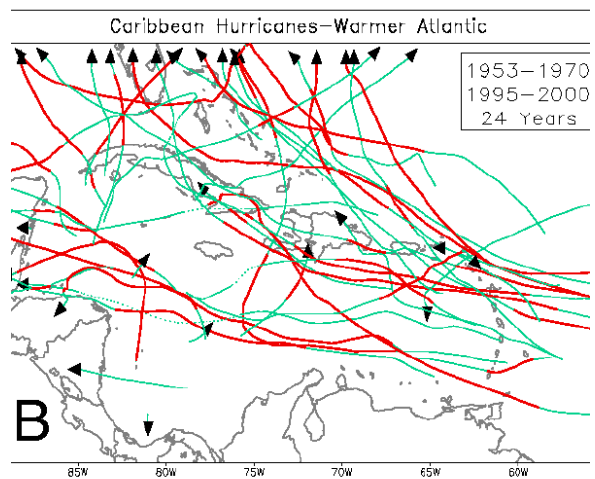


Figure 4b.

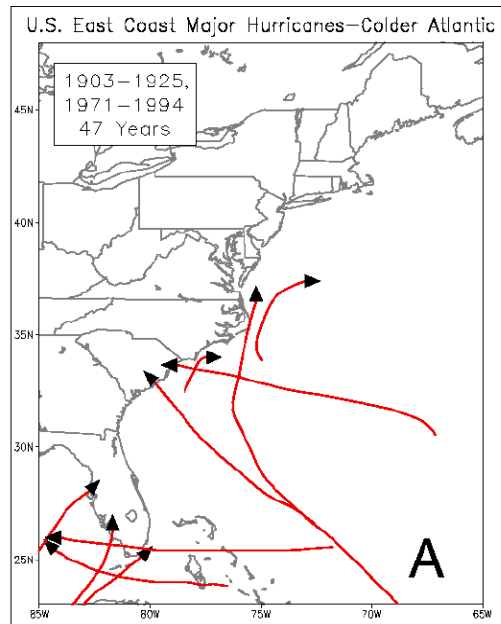


Figure 5a.

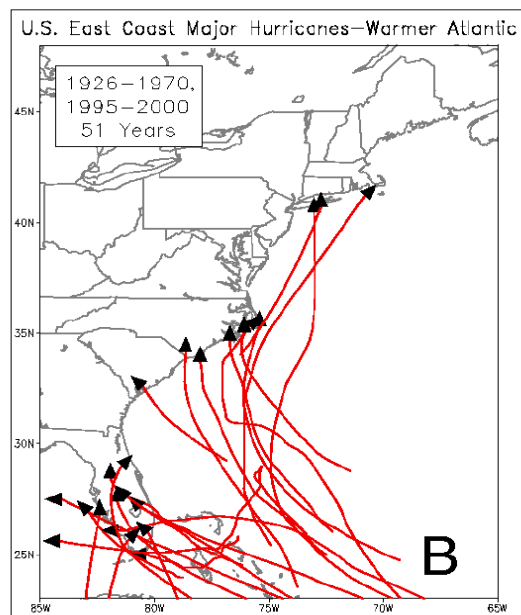


Figure 5b.

Figure Captions

Figure 1. Number of major hurricanes from 1944 through 2000 (32). Less reliable data before routine aircraft reconnaissance dictate caution in the use of these data before 1944 (33). Solid horizontal reference line corresponds to sample mean (2.3). Dashed curved line is 5-year running mean. Also shown is the threshold of three major hurricanes per year (dashed straight line).

Figure 2. Atlantic sector of the first rotated EOF of non-ENSO global SST variability for 1870-2000 referred to as the “Atlantic multidecadal mode” (38, 39). **(A)** Spatial distribution of correlations between local monthly SST anomalies and the modal reconstruction over the indexed region (rectangle), the general area where the mode amplitude is the strongest. This distribution has a similar spatial structure to the actual rotated EOF and gives a measure of the local fractional variance (squared temporal correlation) accounted for at each grid point. Dashed lines give north and south boundaries of main development region (MDR). **(B)** Temporal reconstruction (annual means) of the mode-related variability averaged over the rectangular area in **(A)**. Dashed curved line is 5-year running mean. Although the signal is stronger in the North Atlantic, it is global in scope with positively correlated co-oscillations in parts of the North Pacific (52). For the multidecadal variations shown here, the coherence between the MDR and far North Atlantic is a robust feature. The SST fluctuations in the far North Atlantic could be used as a proxy for changes in the MDR.

Figure 3. Percentage of south-central portion (10° - 14° N, 20° - 70° W) (16) of the main development region (see Fig. 2B) where vertical wind shear $< 6 \text{ m s}^{-1}$ (values extremely conducive for tropical cyclone development) for ASO. Dashed curved line is 5-year running mean. Higher and

lower percentages indicate conditions which are more or less conducive to development, respectively.

Figure 4. Contrast of Caribbean hurricanes between colder **(A)** and warmer **(B)** values of the Atlantic multidecadal mode. Major and non-major hurricanes are indicated by solid red (thick) and green (thin) lines, respectively. Tropical storms are indicated by dotted lines in cases where a hurricane weakened to tropical storm strength and then re-intensified to hurricane status. The years are similar to (34) except that the first nine warmer years (1944-52) are not included to make the number of colder and warmer years equal. The colder years (24 years) include 1971-94. The warmer years (24 years) include 1953-70 and 1995-2000.

Figure 5. Contrast of U.S. East Coast major hurricane landfalls between colder **(A)** and warmer **(B)** values of the Atlantic multidecadal mode. The tracks of major hurricanes that affected the U.S. East Coast at that strength are indicated by solid red lines. The years are like those in (44) except that the first four warmer years (1899-1902) are not included to make the number of colder and warmer years similar. Colder years (47 years) include 1903-25 and 1971-94. Warmer years (51 years) include 1926-70 and 1995-2000.